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U. S. Department of Agriculture

PRICE LIST

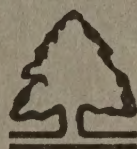


Henry Leuthardt Nursery

King Street Opposite Comly Avenue

Port Chester - - New York

Telephone - Port Chester 2966



*"America's Original Specialist in
Espalier Dwarf Trained Fruit Trees"*

CONDITIONS OF SALE

Terms

Our terms are strictly cash with order. Express C. O. D. orders must be accompanied by one-fourth of the amount of the order as a guarantee. To those who wish charge accounts, our terms are 30 days from date of invoice, net. Charge accounts are extended to customers who have established credit with us in the past, or satisfactory references from unknown parties. Interest at 2% per month to be charged after maturity.

Packing or Crating

Orders amounting to \$10.00 or less, there will be a minimum charge of 50 cents. On orders over \$10.00 add 5%.

Shipping Season

Transplanting can be done successfully in the Spring or Fall, as either season is equally good. Our Spring Shipping Season commences March 15th and continues until late June. Our Fall Shipping Season starts October 15th and continues through December 31st, providing the soil is workable.

Due to certain handicaps, if customers request shipment to arrive at a specified time, we make exceptions only in such instances. Order Early—as orders are filled strictly in rotation as they are received.

NOTE: If you have difficulty making your selection, please send us your space measurements and we will offer you our best suggestions. If your requirements call for items not listed or sizes not quoted, please communicate with us, and we will give you an immediate reply as to whether or not we can furnish them.

Shipping Facilities

In ordering nursery stock our customers are requested to state explicitly the quantity, sizes and the varieties they wish. Give careful and definite shipping address to avoid mistakes in delivery.

We make shipments by Express or Parcel Post. All Express shipments are insured. When losses occur by detention or mishandling, claim should at once be made on the Transportation Company by the Consignee and notice sent to us.

Parcel Post shipments are not insured and travel at the risk of the buyer. We do not suggest parcel post shipments if there is an express station within limits. It is sometimes necessary to cut back tops of trees to comply with parcel post regulations for maximum measurements of parcels. This does not injure the trees, as tops should be pruned back when planting.

Planting Instructions

Are attached to every shipment.

"YOU CAN HELP WIN THIS WAR"
By Producing
MORE FRUIT — MORE VEGETABLES
More Food for the Home Front!

The United States Department of Agriculture is asking the co-operation of Nurserymen to stress the importance of growing more fruit trees at this time. Because of labor and transportation problems, there will be a shortage of fruit throughout the Nation and prices will be considerably higher unless home gardeners, farmers and fruit growers heed the warning.

Therefore, we urge you to plan now to include fruit trees in your Victory Garden. No home grounds, whether large or small, should be without fruit trees—the product of which contribute greatly to healthful and enjoyable meals.

Our catalog contains a choice selection of trees suitable for a variety of purposes. Look it over! Select the trees best suited to your requirements and send us your order now.

Plant fruit trees now and see them bear fruit next year. There is nothing like fresh fruit on the table. Unless you can enjoy picking and eating fully ripe fruit from your backyard, you will never know the tender, juicy and fine flavor fresh fruit has to offer.

Plan Your Victory Garden Now!
DON'T PUT IT OFF!

The demand for our fruit trees will really exceed the available supply, because thousands of people are now more garden-minded than ever before. Nurserymen will be handicapped by the ever increasing shortage of labor and consequently orders will be filled in rotation. We urge you to send us your order now—Delay will result in disappointment.

Buy Now and "Keep 'em Growing"
Is Our Motto in the
ONWARD MARCH TO VICTORY



4 Armed Palmette Pear
in blossom in May



Four months later same
Palmette Pear in Fruit.

Above—Four Armed Palmette Verrier Espalier

Apple, Pear, Plum 4 ft. wide

4 to 6 ft. high. . . . \$12.00 ea.

6 to 8 ft. high. . . . \$15.00 ea.

Below—DOUBLE U FORM ESPALIER

Peach—Apricot—7 ft. wide—\$15.00 ea.



USES OF ESPALIER FRUIT TREES

Espalier Fruit Trees trained in many different patterns adapt themselves to a variety of places. You may—

- (1) Plant Espaliers below windows—between windows.
- (2) Set them against walls, fences, trellises.
- (3) Train them on leaders at the corner of buildings
- (4) Use these trees in the open, along paths, drive-ways, etc.
- (5) As a hedge or screen to set off parts of the garden.
- (6) To obtain a focal point of interest in a rock garden.
- (7) Form an effective arbor over a walk.
- (8) Make an Espalier Garden House on the lawn.
- (9) For planting in Greenhouses—or tub planting on penthouse roofs.
- (10) Perk up dull corners — hide objects from view, etc.

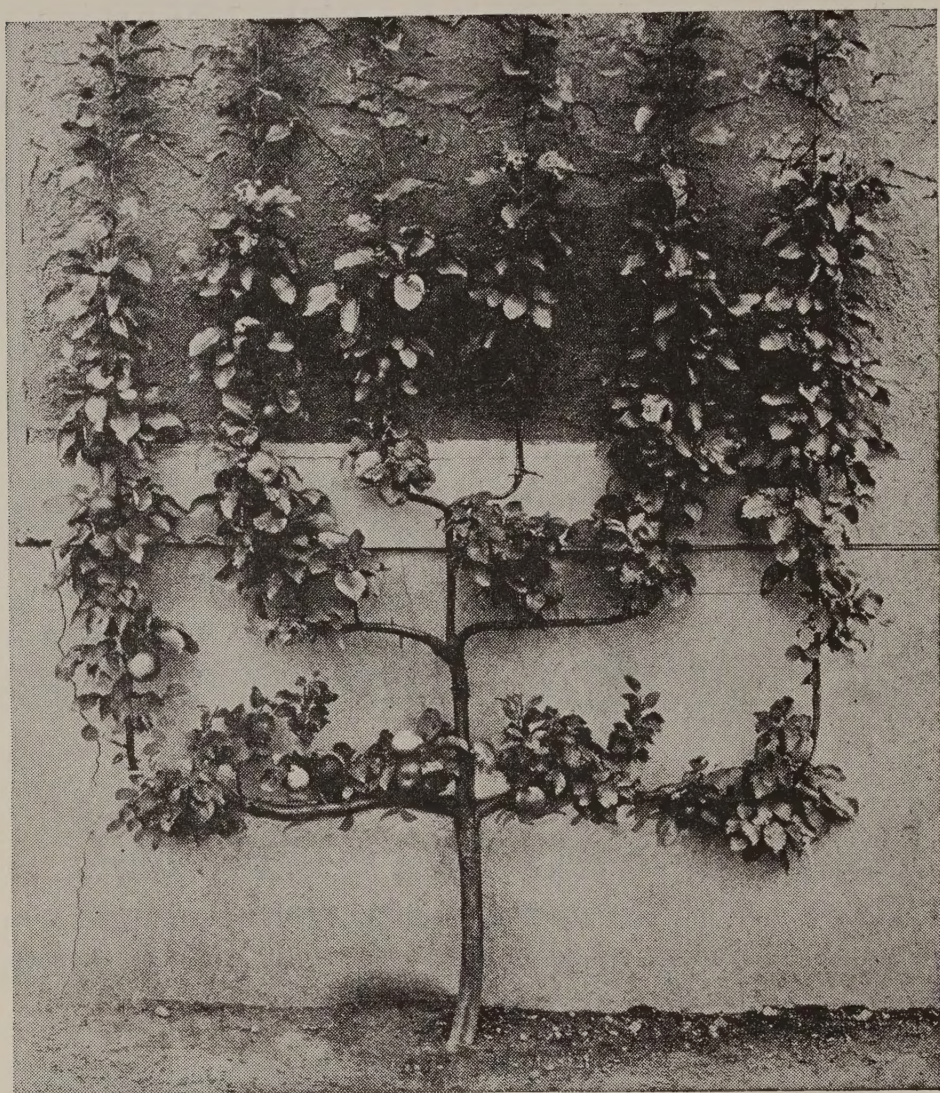
Espaliers—Make Ideal Holiday Gifts

Plants are always appropriate and pleasing gifts, because they reflect thought on the part of the giver. "Neither Gift nor Giver Forgotten."



Above—A Single U Form Espalier

Apple, Pear, Plum	15 in. wide
Peach, Nectarine, Apricot	24 in. wide
4 to 5 ft. high	\$6.00 ea.
5 to 6 ft. high	\$8.00 ea.



Above—Six Armed Palmette Verrier Espalier

Apple, Pear, Plum	6 ft. wide
4 to 5 ft. high	\$15.00 ea.
5 to 6 ft. high	\$20.00 ea.

A Dividend Paying Investment

Aside from their beauty and charm, Espalier fruit trees are a good investment. Like vines, they take up practically no room, thus leaving the precious ground space available for flowers and vegetables. In Europe, where they have been grown for centuries, the primary object is fruit rather than display. They yield unusually excellent, large sized fruit, and of much better flavor than ordinary fruit, due to the greater sun exposure penetrating through all the branches and because the trees are grafted onto the proper root system. As the trees grow in size, the fruit crops gradually increase, and pay their owners annual dividends in fruit of the highest quality.

Attract Attention Throughout Long Season

These distinctive fruit trees are a never-failing source of interest from the time the pretty blossoms appear in the Spring—until the richly colored fruit ripens. In the winter, even then, they are extremely decorative, with their lace-like shapely structure.

Guaranteed—Genuine Dwarf Trained Espaliers

Our Espaliers, grown in New York State and Eastern Canada, have proven their hardiness and resiliency over and over again—and especially during the extreme cold and heavy frost of the past winter.

Espaliers grown on the Western Coast and sold here in the East have not the same capacity of surviving our zero winters as Eastern grown Espaliers. Oregon grown trees have never experienced sub-zero weather and are in danger of losing their main branches thus resulting in an imperfect Espalier when subjected to our cold winters.

We grow and train into Espalier forms only those varieties, which, after years of experimenting, have given us the most satisfactory results. When you order direct from us, you are sure to get a Genuine Eastern Grown Leuthardt Espalier that is guaranteed to thrive well in your climate.

The average Espalier we offer for sale has been in training for a period of six years or more—and is the result of faithful care and a perfect knowledge of the art of pruning. Only the finest root stock is used and as each tree is trained on sound biological laws, it is guaranteed to keep its shape.

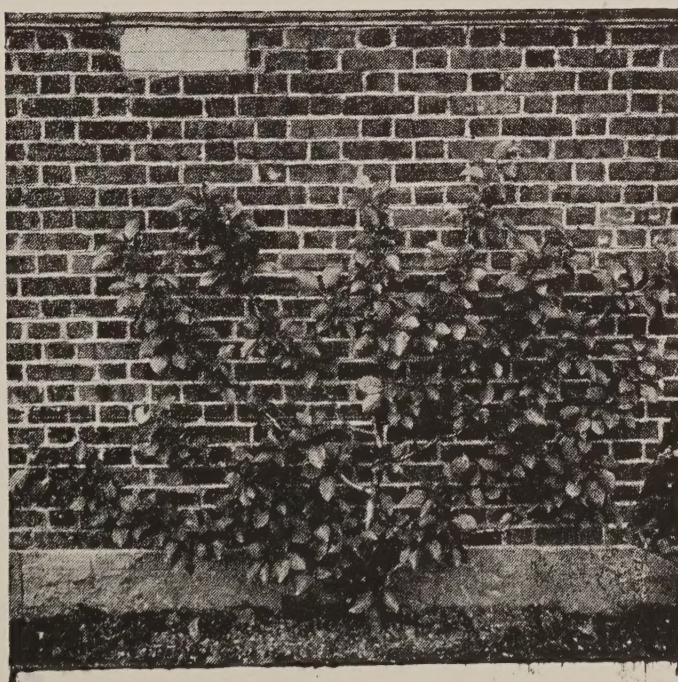
Leuthardt offers a wider variety of forms suitable for many purposes. The slight difference in price is more than compensated for by the better quality trees we offer—and no better stock of Espalier trees can be found anywhere in the world.

BELOW—FAN SHAPED ESPALIER

Apple, Pear, Peach, Nectarine, Apricot

6 ft. spread, 5 ft. high.....\$8.00 ea.

8 ft. spread, 7 ft. high12.00 ea.





ABOVE—TRIPLE U FORM ESPALIER

Apple, Pear, Plum—6 ft. wide

4 to 5 ft.	\$15.00 ea.
6 to 8 ft.	\$25.00 ea.
5 to 6 ft.	\$20.00 ea.



Espaliers Completely Trained Easy to Care For

All our varieties are carefully selected for their hardiness and suitability for Espalier training. They will thrive well in any exposure whether east, west, south or north, providing they receive a few hours of daily sun. Espalier fruit trees require even less care than other fruit trees. The difficult part, the training of Espaliers has already been done by us, and no previous knowledge or experience is necessary for you to continue growing them successfully on your grounds. The trees are easy to spray and the fruit can be readily harvested. Full cultural directions are included with every shipment.

BELOW—EIGHT ARMED PALMETTE VERRIER

Apple, Pear—8 ft. wide

5 to 6 ft. high \$25.00 ea.

6 to 7 ft. high 30.00 ea.



Courtesy H. B. Tukey, Geneva Exp. Station

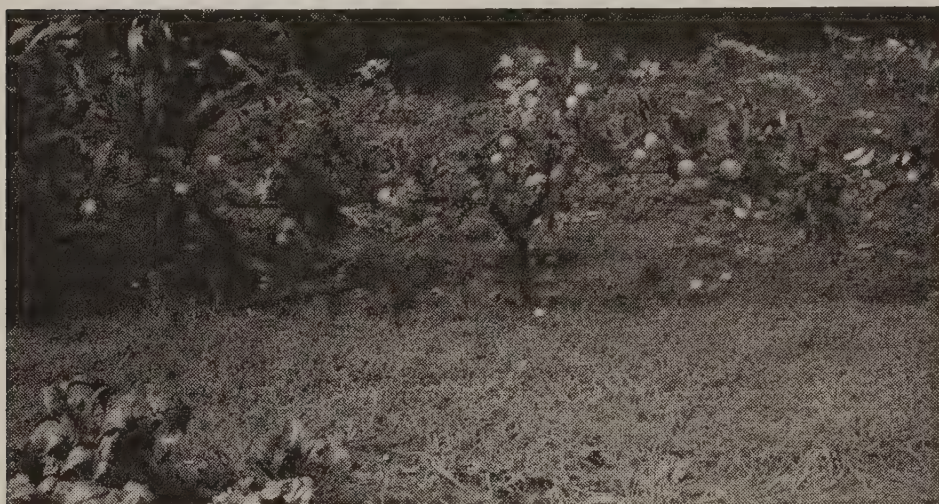
Dwarf Apple and Bearing Its Third Crop

BELOW—SINGLE HORIZONTAL CORDON

Apple, Pear, Plum — 18 in. high

5 to 6 ft. long \$6.00 ea.

6 to 8 ft. long 8.00 ea.

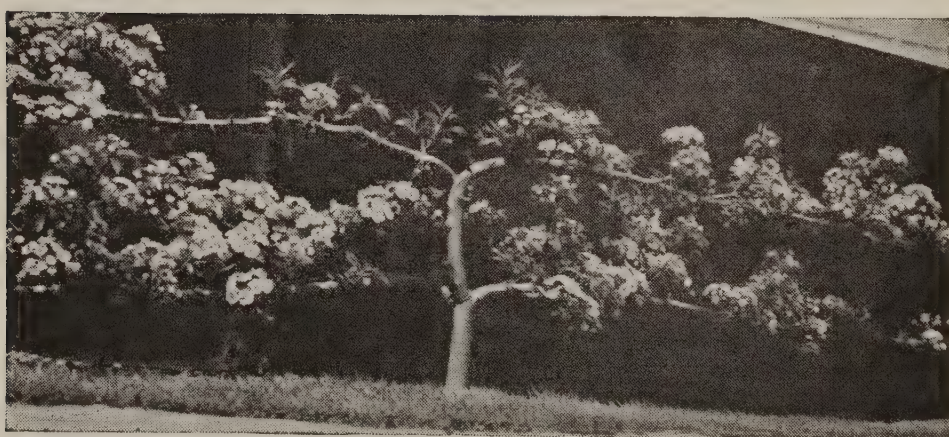
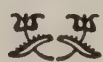


BELOW—DOUBLE HORIZONTAL CORDON

Apple, Pear, Plum — 3 to 3½ ft. high

5 to 6 ft. long \$10.00 ea.

6 to 8 ft. long 12.00 ea.



TRIPLE HORIZONTAL CORDON

Apple, Pear — 4 to 5 ft. high

6 to 8 ft. long \$15.00 ea.



*Single Cordon Dwarf
Pear Tree*

The Single Vertical Cordon, shown at the left, is the simplest Espalier form. It is usually planted in combination with more elaborate forms, especially at the ends of a planting. It may also be planted in rows along a wall, as a screen, along leaders, against house corners, etc. Because of their small size, the trees can be planted as close as one foot. A row of Single Cordons makes an interesting division line between the vegetable and the fruit garden. Cordons are inexpensive and can be freely used in the average home garden.

SINGLE VERTICAL CORDON DWARF PEAR TREE

Apple — Pear — Plum

4 to 6 ft. high \$3.75 ea.

ESPALIER VARIETIES

APPLE—Red McIntosh, Wealthy, Fameuse, R. I. Greening, Delicious, Cortland, Duchess of Oldenburg, Early Harvest, Yellow Transparent, Northern Spy.

PEAR—Seckel, Flemish Beauty, Bartlett, Duchess d'Angouleme, Clapp's Favorite, Kieffer, Beurre Bosc, Sheldon.

PLUM—Reine Claude, Abundance, German Prune, Italian Prune, Burbank, Stanley Prune.

PEACH—Champion, Carman, Elberta, Rochester, Crawford, Golden Jubilee, Hiley, J. H. Hale, Valliant, Belle of Georgia.

APRICOT—Moorpark, Riland, Perfection, Alexander.

NECTARINE—Red Roman, Hunter, Boston, Napier, Victoria.

THE BELGIAN FENCE

This is one of the many interesting and attractive patterns made with Espaliers. Always exquisitely beautiful. It takes 5 trees to obtain a diagonal lattice effect. Each tree is planted 2 feet apart. A Belgian Fence may be extended any desired length. Available in apple, pear and plum. Individual trees, 6 feet high, \$5.00 each.



MAKE YOUR GARDEN MORE BEAUTIFUL WITH PRACTICAL ESPALIERS!

"A Luxury of the Wealthy Now Within Reach of All"

Dwarf Espalier Fruit Trees were devised by clever European Horticulturists to make the most of limited space otherwise wasted. For centuries, the Old World castles and estates have relied on Espalier trees for decoration, symmetry and utility. These intriguing Espalier forms are the result of traditional Old World Charms combined with modern American needs and uses. It remained for Henry Leuthardt, America's Pioneer Espalier Specialist, whose family has been training Espaliers for generations in Switzerland, to develop these exquisite trees suitable for this country's soil and conditions.

At the age of 13, he served his apprenticeship under Old World master gardeners. He studied the science of botany at European universities and was awarded a medal by the University of Strasbourg for proficiency in the art of training Espalier fruit trees.

Coming to the United States, Henry Leuthardt devoted his life work in growing and training Espaliers. He has won honorary mention and awards at various Horticultural shows throughout the country. Some of his plantings have been viewed at Gardens on Parade, New York World's Fair; George Washington's Home, Mount Vernon, Virginia; The Metropolitan Museum of Art, Fort Tyron Park, New York; and Gardens of the Nations, Radio City, New York City.

*Some of the Medals awarded Henry Leuthardt for
perfection in the art of training Espalier Fruit Trees.*



DWARFER DWARF FRUIT TREES

Just the trees for your Victory Garden. Whether your space is small or large—grow an orchard in your yard. Extremely Dwarf trees grow less than half as tall as standard size trees—bearing a generous crop of bigger, more luscious and richly colored fruit than larger trees do. No waiting years for fruit—dwarf fruit trees come into bearing very early. As a general rule, all dwarf fruit trees are fruit bearing at 3 years, with the exception of peaches and nectarines which varieties bear at 2 years. Under normal conditions, dwarf trees should bear fruit the following planted.

Leuthardt's Dwarfer fruit trees are all healthy, hardy specimens, carefully chosen and tried for their suitability to this country's soil and climate. It will pay you to plant Northern grown fruit trees that have proven most satisfactory to growers throughout the United States because of the extra strength and hardiness our rigorous climate develops in them.

The Dwarf Apple Trees are grafted on Malling Stock. Mostly on East Malling No. 9. There are also certain varieties grafted on No. 1, 2, 3 or 7, for reasons which we found necessary after long years of experimentation.

This root stock is the real dwarf understock making our trees very dwarf in growth and far superior in quality. Our pears are grafted on Quince, Peach, Apricot, and Nectarine varieties on Almond; and Plums on St. Julien.

Select and grow the very choicest varieties which are neither to be obtained in the stores or never reach the markets because due to their very fine qualities they cannot be used commercially. Only the Home Owner can grow these special varieties and let the fruit stay on the trees until they have reached their peak of ripeness and flavor. Until you can enjoy picking and eating, tender, juicy, fully ripe fruit from your backyard—you will never know what the real fresh fruit flavor is like.

When you buy a Leuthardt's Dwarf fruit tree, you can rest assured you are dealing with a reliable house built through hard work, honesty and fair dealings. You will find our stock sturdy, heavy rooted, true to name and quality, and free from diseases. Our 18 years of progress, satisfied customers and repeated orders is our guarantee. You will be delighted with our fine class of nursery stock.

DWARFER DWARF FRUIT TREES

Apple, Pear, Plum, Peach, Apricot, Quince

1 year old, partly branched	\$2.50 ea.
2 year old, well-branched	\$3.75 ea.
3 year old, well-branched	\$5.00 ea.

Apple — Pear

5 - 6 year old, extra well-branched	\$9.00 ea.
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SEMI-DWARF FRUIT TREES

Apple, Pear, Plum, Peach, Apricot, Nectarine

(These varieties are available in the same sizes and prices as those listed under Dwarf Dwarf Fruit Trees. Should you desire Semi-Dwarf Stock, specify this fact on your order.)

SEMI-DWARF FRUIT TREES

Sweet Cherry — Sour Cherry — Nut

2 year old size	\$2.00
3 year old size	\$3.75

PLEASE NOTE: Plant Dwarf Apple trees on Mall-
ing IX Rootstock, 8 feet apart either way. For all
other Dwarf varieties, allow 10 feet distance between
trees either way. Plant Semi-Dwarf Fruit Trees 15 feet
apart either way.

Dwarf Fruit Varieties

APPLE—Red McIntosh, Wealthy, Fameuse, R. I. Green-
ing, Red Astrachan, Delicious, Cortland,
Stayman Winesap, Duchess of Oldenburg,
Yellow Transparent, Cox's Orange, Graven-
stein, A. G. Russet, Jonathan, Redwin Spy,
Early Harvest, Lobo, Northern Spy, Golden
Delicious, Ribston Pippin, Rome Beauty,
Golden Russet, Melba, Yellow Delicious,
Alexander, Blenheim Orange, Spitzenberg,
Yellow Newtown.

SPECIAL: The Richared Delicious is a fine apple and
far superior in flavor and quality than the
Delicious.

PEAR—Seckel, Flemish Beauty, Bartlett, Duchess
d'Angouleme, Clapp's Favorite, Kieffer,
Beurre Bosc, Duchess de Merode, Sheldon,
Wm. Nelis, Old Home, Easter, Gorham,
Howell, Beurre d'Anjou.

SPECIAL: Doyenne de Comice, finest of pear varieties.
This is the pear which has been marketed
under a trade marked name as "Royal
Rivera."

PLUM—Reine Claude, Abundance, German Prune, Ital-
ian Prune, Burbank, Damson, Red June,
Stanley Prune. (Continued on Page 16.)

PEACH—Champion, Carman, Elberta, Rochester, Crawford, Golden Jubilee, Valiant, Belle of Georgia, Hiley, Eclipse, J. H. Hale, Red Bird, Golden East.

APRICOT—Moorpark, Riland, Perfection, Early Golden, Alexander, Superb.

NECTARINE—Red Roman, Hunter, Boston, Victoria, Newton, Napier, Humboldt, Sure Crop.

QUINCE—Orange, Champion.

SWEET CHERRY—Windsor, Black Tartarian, Bing, Yellow Spanish, Napoleon, Lambert.

SOUR CHERRY — Montmorency, Early Richmond, English Morello.

FILBERT NUT—They are entirely hardy and fruit profusely when quite young. Filberts are self-sterile, but 2 or more should be planted to aid in cross-pollination.

BLACK WALNUT—Thomas, Stabler, Ohio, Horton, Ten Eyck, Heartnut.

Planting A Belgian Fence

1. Plant trees at a distance of exactly 2 feet apart from each other in order to obtain perfect square with the branches. (It is perfectly alright to plant a Belgian Fence with trees spaced 3 feet apart from each other. This type of planting will give an oblique effect rather than a diamond lattice pattern.)

2. Plant the trees so that the graft comes one inch above the surface.

3. The clutch of each tree should be set all on the same level or parallel lines. This step is most essential since the perfection of the entire lattice work is based upon this one fundamental.

4. Should a clutch of a tree come higher than necessary, plant the tree deeper in the ground until the clutch is adjusted to match the other trees.

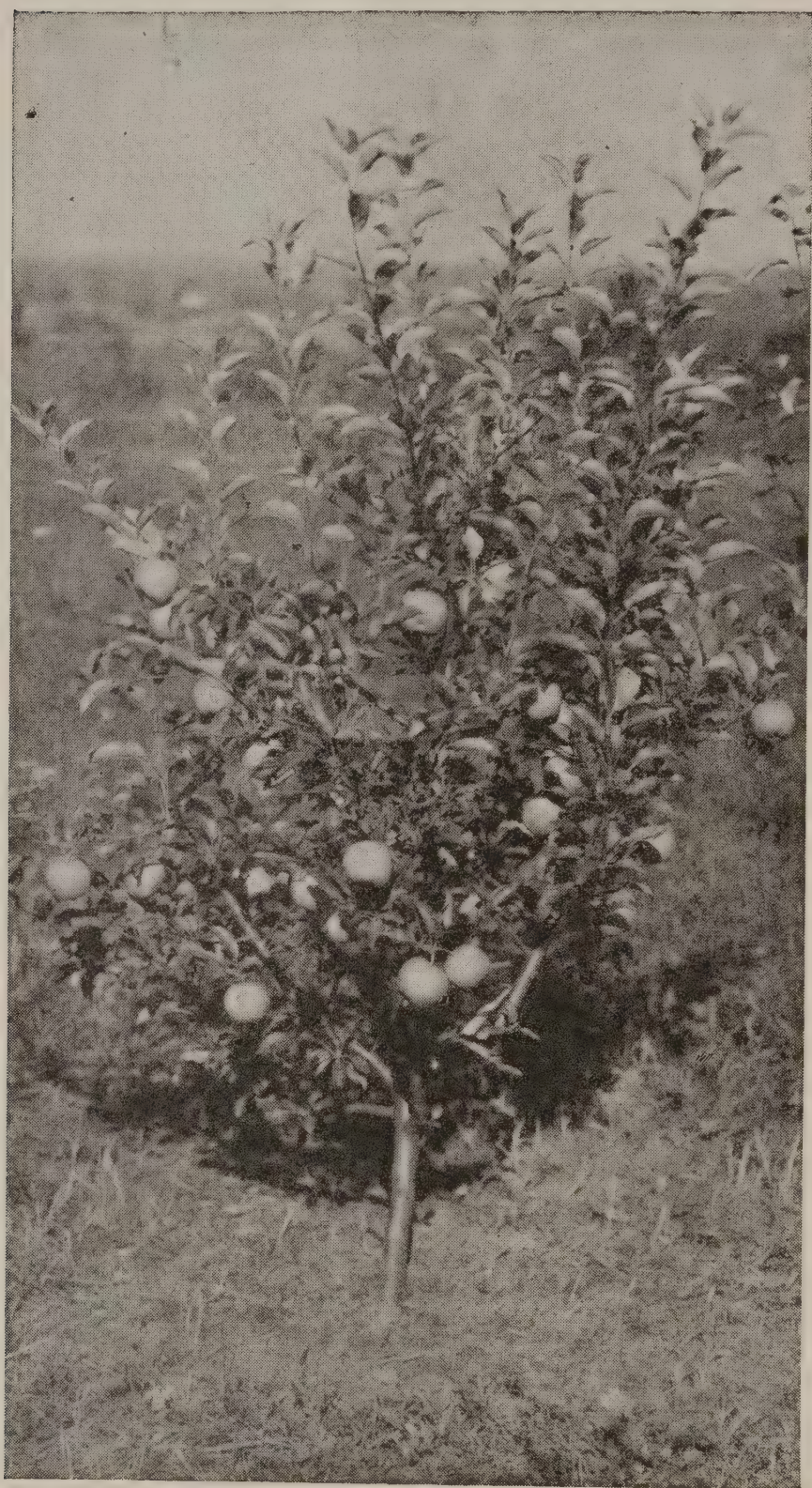
5. Drive posts into the ground of either cedar or pipe. One on each end of the row of planting. The posts should be as high as you wish the planting to ultimately reach. String horizontally three rows of galvanized wire and attach to the posts. The first wire should be 18 inches from the ground. The second wire should be one foot above the first wire. The third wire should be one foot above the first wire. Fasten wire to posts. (If cedar Posts are used, hook nails are used to hold wire securely to posts.) Then tie branches to wire with raffia. (Continued on Page 28, 5B.)



Courtesy H. B. Tukey, Geneva Exp. Station

Early McIntosh Dwarf Apple. The blossoms themselves are a pretty sight and they foretell a full load of fruit.

NOTE: Our trees may be slightly higher in comparison to prices quoted by other nurseries . . . but, our trees are guaranteed to be the real Dwarf trees grafted on true Malling root stock, Nos. 9, 1, 2, and 7, according to their special needs. We are probably the only growers in America who keenly discriminate between Malling Strains for each particular purpose.



Courtesy H. B. Tukey, Geneva Exp. Station

Dwarf Apple in Fruit

Secondly, our stock consists of a large selection of fruit varieties that were introduced before the Embargo and are now scarce in this country. Those who lived or traveled abroad will easily recognize these varieties in our catalog. Our 25 years' experience in growing fruit trees and Espaliers under American Conditions is evidence our trees will thrive well wherever other fruit trees grow.

SMALL FRUIT

GRAPE VINES

(Strong Rooted, 2 Year No. 1 Vines)

The Grape, while it loves moisture, must have well-drained land, and there should be free exposure to sun and air. Annual and careful pruning in early spring when fully dormant is essential to the production of good grapes, and if the land is poor manuring must not be forgotten. Plant 8 x 8 ft. apart, each way.

Each 65 Cents 3 for \$1.50

Coco, early, rich red wine grope

Catawba, late, dark purplish grape

Delaware, midseason, red

Concord, midseason, black with blue bloom

Fredonia, real early, black

Moores Early, black with blue bloom

Niagara, midseason, yellowish white

Portland, earliest white grape

BLUEBERRIES

Blueberries require an acid soil containing an abundance of peat and sand or other partially rotted vegetable matter. They need moist soil, and good drainage, so that the roots can get air during the growing season. Plant 4 x 4 ft. apart each way.

Concord — Jersey — June — Rancocas — Rubel

(For best results plant 2 or more)

3 Year Old, No. 1 each \$2.25

3 Year Old, No. 1 3 for \$6.00

4 Year Old No. 1 each \$3.45

4 Year Old, No. 1 3 for \$9.00

RASPBERRIES

Raspberries—coming immediately after the strawberries, they are the ideal summer fruit. They give big returns of fruit with very little effort. They require ordinary soil and plenty of moisture. Plant 6 x 3 feet apart.

Cumberland, Midseason, Black 10 for \$1.80

Sodus, Midseason, New Purple 10 for \$1.80

Indian Summer, Everbearing Red 10 for \$1.80

Marcy, Midseason, Red 10 for \$1.80

Latham, Midseason, Brilliant Red 10 for \$1.50

Taylor, Midseason, New Red 10 for \$1.50

STRAWBERRIES

(Once Transplanted Heavy Plants)

Strawberries, they do best on soil of a light sandy loam, retaining the Summer moisture easily is best. Old soil may be improved by the plowing in of green crop, wheat, clover, or vegetables. The hoe must be used freely, not only to keep the weeds out, but to have always a layer of finely pulverized soil as a mulch on the top. Plant 2 x 2 feet apart each way.

Premier (very early) deep red

Fairfax (early) light red

Catskill (midseason) dazzling red

Senator Dunlap (late) very dark red

One dozen for \$2.25 100 for \$8.00

PLANTING INSTRUCTIONS

For Best Results

Cultivate thoroughly and deeply, raking or harrowing the soil fine to facilitate planting. Dig the hole deeper and larger than necessary to admit the entire root system in their natural position without crowding or cramping the roots. Loosen the soil at the bottom of the hole to provide aeration, good drainage, some plant food and a more adaptable condition for root development. If this is neglected, the roots are soon surrounded by a strong wall and you cannot expect them to live very well.

Ordinary garden soil is sufficient for the good growth of fruit trees. Never let manure come in contact with the roots and never use manure at time of planting. Rich soils should be avoided since it impairs the bearing of a fruit tree.

Planting

Plant the tree as it arrives, removing the wrapper. All broken or bruised roots should be removed with a sharp knife in a slanting direction, on the under side; this will cause the wound to heal over readily, by throwing out plenty of fibrous roots at the end; before the tree is set in the hole. Use good top soil for filling in the bottom of the hole and around the roots, slanting it a little to the southwest, leaving a little mound in the center of the hole; place the tree in position and arrange it to the proper depth by filling in or raking back the soil to or from where the tree will stand, then fill in fine, mellow soil between and around the roots with the hand, arranging all the roots in their natural position, and packing in the soil carefully around them. When the roots are barely covered, sprinkle on not less than a half bucket of water to moisten the soil and settle it among the roots; then fill to the top and press down the earth around the tree with the foot; throw a bucket of water around each tree to settle the ground. A covering of coarse, manure, straw, marsh or hay, during the first season, will effectually prevent injury from drought and is a benefit at all times.

Depth to Plant

All fruit trees should be planted with the graft one inch above the surface.

After Culture

Cultivate well in the early part of the summer and in the month of October. The principal of cultivation is that the loose and pulverized soil on the surface prevents the evaporation of moisture and keeps weeds in check.

Bone dust, and plaster are excellent manure and stimulant for trees when used on the surface. No manure of any kind should be put in the hole with the tree; it is very injurious, causing a rank growth, making the tree tender and consequently short lived.

Wood ashes are unquestionably the best fertilizer for all kinds of fruit trees, but they will be benefited by the liberal use of most any well-rotted manure, and planters should bear in mind that it pays both in the quality and quantity of the fruit to fertilize fruit trees.

The only safe way to apply manure and fertilizers to the tree after planted is to dig or rake them into the ground—not in actual intimate contact with the roots. When so applied, the moisture in the ground dissolves them and makes dilute solutions which feed the tree instead of damaging it. Fertilizing in the fall acts as a winter mulch and enriches the soil for the next season's showing.

Watering

Avoid watering fruit trees for too much water harms the root system and prevents the trees coming into bearing. Fruit trees seldom require watering, except in very dry weather, then artificial watering is advised. If a drought occurs, trees bearing fruit must be watered. One good watering once a week at night and repeated the next morning, is far better than ten times as often if improperly done. The right way is to draw away a little of the soil from the side of the tree, and allow all the water that the soil will absorb to soak in, then replace the dry soil. Repeat this the following morning.

Thinning Out the Fruit

Many varieties of apples, pears, peaches, plums, nectarines and apricots are naturally so productive that they set more fruit than the tree can properly mature. When this occurs, it is highly important to pick off the fruit. As soon as the fruit is fairly set, as a general rule, pick off the fruit with a spacing of 4 to 5 inches between the fruit. Very young trees should not be allowed to bear too heavily.

Acid Soils

Use lime. Lime is not a fertilizer, but is of benefit to the soil through its physical and chemical effects. Should be applied once every three years to land which is inclined to become sour. The most practical type of lime to use is raw ground limestone and air-slacked lime. Limestone may be bought, is safe to use and is effective. Lime is a safe investment and should be added to the soil whether sweet or sour because it will improve the flavor and quality of the fruit.

Sweet Soil

May be changed to acid by adding sulphate of potash or super-phosphate to the soil. Often the addition of leafmold, peat or saw dust, all of which possesses acid-producing effect, is all that is required.

Clay or Sandy Soil

Add Cow Manure.

Winter Care

Rabbits, Cats, Rodents and their control:

1. To protect a tree in winter from depredators, it would be advisable to wrap several thicknesses of newspapers around the trunk and lower branches of the tree in the fall. The paper should not be tied too tightly and it should be removed in the spring.

2. Another method to prevent damages by animals, is to treat the trunk with a repellent solution. The copper Soap Rodent Repellent is a dark green paint-like material which can easily be applied to a tree or shrub, giving a repellent protective coating. Has fine lasting qualities, and will remain on trees throughout the winter and spring. This is endorsed and used by the Michigan State College. You may obtain this solution from M. J. Beck, 510 N. Cedar Street, Lansing, Michigan.

Pruning — Peaches and Nectarines

There is a general opinion among the public that the peach tree is very short lived and therefore, not worthwhile planting. This is decidedly wrong. The peach and nectarine trees are some of the most rapid growing trees and reach their ultimate height within 4 - 5 years.

Now, since peaches or nectarines grow young wood and fruit only on wood that has been grown the previous year, the tree dies or withers away in such a short time if not pruned.

It is absolutely essential to prune the trees severely every spring in order to obtain the necessary young wood and fruit. If this pruning is applied correctly, a peach tree can live from 18 to 30 years and produce a full crop of large fine fruit every year. Such a pruning is neither complicated nor difficult to apply on dwarf peach or nectarine trees.

The first step which is most important, must be applied to all peach and nectarine fruit trees, regardless if they are dwarf or not, at time of planting. A one year old tree must be pruned back radically to about 15 to 24 inches above the graft.

On two or three year old trees, no branches should remain that are higher than 2 or 3 feet from the ground. Young side branches that have been grown the previous year, should be reduced back to one or two buds,

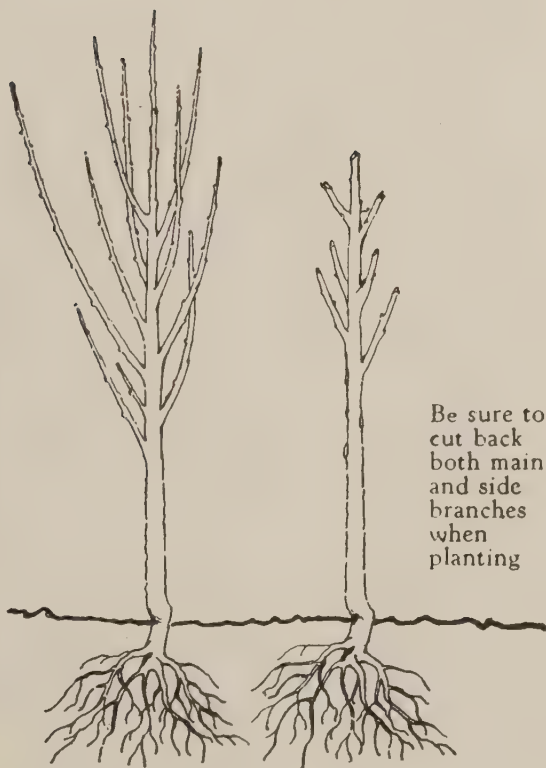
A peach or nectarine tree, pruned in this manner, will develop for this coming spring, from twice to three times and even more the amount of wood that has been cut away. It is on this young wood only that you will grow your fruit buds for the following season.

The ground must be well-drained and kept clean and mellow. Give them an occasional dressing of wood ashes. Placed around the body of the tree is sure protection against invasion of the peach borer.

1 year old peach or nectarine cut
back 15 inches from the ground.



2 or 3 year old peach
or nectarine tree before
planting



Before

After

2 or 3 year old tree after
planted.

Young trees should be well mulched every spring. If a heavy mulch is placed about the trees after the ground is frozen, it will retard the growth in early spring, and often insure a crop of fruit. Keep the tree in good shape and you will have splendid returns.

Pruning Grapes

Grapes, like peach trees, grow their fruit only on one year old canes. It is futile to plant grape vines older than one or two years old. These also must be pruned back severely like the peaches. The grapes, like the peach, will never bear fruit the first year after planting, regardless how old a vine you may plant. Most of the old wood must be eliminated to get the live prolong growth. Cut tops back to 6 inches above the ground. Plant the "graft" below the surface.

Pruning Cherries

Of all fruit trees, cherries have the greatest amount of vitality when transplanted. Often up to 50 per cent of all unpruned cherry trees are killed. The pruning of the cherries reduces this great loss considerably. One year old cherries should be reduced to one-third of their size. Two and three year old trees should have all the side branches of their crown reduced to about one-third of their size.

Pruning Pears, Plums, Apricots

These varieties should also have the side branches of their crown reduced about one-fourth of their length. Some of these branches are stronger than others and the general rule is to reduce these overgrown branches to the length of the average remaining branches. A good guide is to give the tree a pleasant, even and somewhat pyramidal form.

Pruning Apples

Dwarf Apples need little pruning. It will suffice to clip the longest branches back two or three buds. Also when there is an oversized branch or bruised branch which gives the tree a one-sided appearance, cut them back to the size of the other branches.

Pruning Nuts, Quince

These varieties require no pruning at time of their planting.

Pruning—Standard Apples—Pears

Both root and top should be pruned at time of planting before the tree is set in the ground; the neglect of this causes the loss of an immense number of trees.

When taken from the nursery, the roots are more or less mutilated, therefore the balance of the trees must be restored by cutting off a portion of the sides and top branches.

Cut back each branch or side limb to a bud not more than 4 or 5 inches above the highest side limb. Where there are no side limbs the tree should be headed back

to a height proper to form a top. None of the lower limbs should be cut off entirely, as it is best to form the head as low down as possible, so that the limbs and leaves will protect the trunk of the trees from the direct rays of the sun.

Prune any time from November to April, but prune every year.

In pruning, cut above a bud that is on the outside of a limb, as that bud will develop into a branch, growing outward, and it is desirable to have the growth of the tree spreading, in order to let in sunlight and air. If the limb is cut just above a bud on the inside, the future branch will grow toward the main trunk.



SPRAYING

The amateur home gardener will find that one or more of the recently introduced preparations now on the market are practical to use. Nearly every type necessary is sold in convenient packages sufficiently large to keep the garden well sprayed for the entire season. The directions for use are plainly marked on all packages.

To produce the highest results, spraying is of vital importance. A Spray Calendar, giving correct dates for spraying and formulas of the different mixtures and sprays to be used, is issued by the Department of Agriculture, Washington, D. C. But, we will give you here shortly the most essential points.

There are two distinct groups of insects—those known as the chewing or biting, and the sucking. The chewing insects are beetles, and worms that damage plants by eating holes into the leaves, unopened buds, and flower petals. To combat this type it is necessary to use some form of stomach poison spray, such as arsenate of lead, paris green or black arrow.

Sucking insects are those that do damage by sucking nourishment from the leaves, causing them to curl, wither and eventually drop. Some form of contact spray is necessary. For these pests, there are several forms of nicotine solutions commonly used, such as black leaf 40, black arrow dust, lime sulphur wash.

Diseases such as blight, fungus, rot, scab, etc., are combated mostly by the use of a fungicide either Bordeaux Mixture or Lime Sulphur.

The most important and most effective winter spray is the Lime Sulphur Spray. It will act as a beneficial cleanser for almost all trees. Used when the trees are fully dormant it is easily applied, and fully effectual if done at all carefully, because no foliage obstructs a thorough covering of all parts of the branches and in-

dividual buds. It is the only effective spray for the eradication of blister mite on pears, the curl disease on peaches and all the various scale insects affecting our different fruit trees. Regarding apple and pear scab on fruit trees, it cannot be better combated than with Lime Sulphur applied in early spring. Where scab is prevalent on apples and pears a Copper Spray may be necessary in the spring as soon as the fruit has set and this should be made a combined Fungicide and Insecticide Spray by adding to the Copper Spray some Arsenate of Lead, which should be used under all circumstances, to kill caterpillars of all kinds, the Codlin moth worm, and in fact all "leaf-eating" insects. Our aim should be to use the spray more as a preventative measure than to wait until wholesale damage is done. If the Winter spray has been done thoroughly, no serious outbreak of sucking insects (Aphis) should occur, but if the latter are troublesome as they sometimes are on cherries and young apple trees, a contact spray of Black Leaf 40 and soap applied under good pressure so as to get the spray on the underside of the leaves where the Aphis hide, should be used. If the trees are not too large, it is much more practical to keep a watchful eye for the first appearance of Aphis, and as these always work on the very tips of the young branches, bend these latter gently over, and dip bodily in a vessel containing the spray. Or, paint the branches with a brush. This will make a really thorough job, killing everything off entirely.

In some sections, apple trees are affected with Canker. This disease is the most serious of apple orchards, and if left to work at will, first of all destroys single branches and limbs, and finally whole trees. The thorough coating of all surfaces of bark with double strength Bordeaux Mixture early in October while not actually curing the old canker sores, will, however, prevent the outbreak of new canker spots, and the old sores will gradually heal up.

Instructions For Espalier Trained Fruit Trees

PLANTING: The hole should be at least 2½ feet square and 2 feet deep. Plant the tree as it arrives, removing the wrapper. Spread the roots in their natural position to avoid cramping. Cut away any bruised roots. Place top soil at the bottom of the hole. Pack soil firmly about the roots. Soak well with water to avoid air pockets. Watering should be done in the evening or early morning. Set the tree at least one foot away from the wall. Plant the tree deep enough so that the graft is one inch above the ground.

FASTENING: Support of some kind is necessary to protect the branches from severe winter winds and weight of fruit. There are several methods of fastening Espalier Trees. The most popular methods are described below:

One Espalier Tree Planted Against Wall or Fence—

1. Drive spikes into the wall allowing 6 inches to protrude from the wall. The spikes should be set behind the end leaders.

2. Stretch wire horizontally and attach wire to the spikes.

3. The first series of wire is placed a few inches below the horizontal branch for best results. Hence, the vertical leaders will not have a tendency to spring upward. The second series of wire should be stretched below the center U. The third series of wire should be stretched at a point where you intend the tree to ultimately reach.

4. Tie the main leaders carefully to the wires with tarred twine, raffia or willow.

Two or more Espalier Trees Planted Against a Wall or Fence—

1. At either end of planting, drive spikes into wall, behind the main leaders, allowing 6 inches to protrude.

2. If several trees are planted, spikes may be set at intervals, wherever support is needed.

3. The first set of spikes should be placed 18 inches above the ground. Place spikes at points where in your estimation the trees will require most support.

4. Tie leaders to wire with raffia, tarred twine or willow.

PRUNING—Espalier Dwarf Fruit Trees—Peach, Nectarine, Apricot. The essential pruning should be done during the summer. Pinch every new shoot to two eyes, in doing so, two new young branches will be obtained. In the following spring one of these branches should be allowed to bloom, prune the other one down to two eyes. This one gives you the two young branches for the coming year. This procedure done every year creates a continual new supply of young wood. It prevents the side branches from becoming too big and taking all the strength. By following this method, the era of productivity of a peach tree is almost doubled. The bearing spurs are easily recognized during the dormant period, as all the blooming eyes are double. This enables one to decide more easily which branch to leave. Since Peach, Nectarine and Apricot trees all bear fruit only on the new wood made the previous year, this pruning must be followed very closely, if fruit is desired. After leaders have attained 15 inches, tie back like backbone of a fish so as to allow the sunshine and light to reach the eyes as the bearing eyes develop on the new wood during September and October, when exposed to the sun.

PRUNING FAN SHAPED ESPALIERS—Follow instructions above. In addition, any side shoots that develop outward, cut the shoots back to 4 inches. This rule applies to all varieties.

5B—Or, have supports made to order from your local blacksmith. Iron rods, the thickness of a pencil are shaped and soldered together to match the individual tree. One is placed behind each tree. The branches are tied to the rods with raffia. This method of support is an expensive proposition, but it gives an extremely neat effect since all the framework is hidden from view.

7. As the leaders grow taller, the tops may be trained horizontally to give the fence that finished effect, or you may allow the leaders to continue to grow upward.

Suggestions:

To avoid spikes driven into the wall, drive 2 x 2 inch stakes (10 ft. lengths) into the ground, at either end of the planting. These stakes should be placed as close as possible to the wall. Then run wire horizontally and fasten to the stakes by means of hook nails. If the planting consists of several trees, place additional stakes at intervals where support is needed. Of course, spikes driven into wall give best results.

One or More Espalier Trees Planted in the Open—

1. At either end of the planting, drive two cedar posts, bamboo sticks or pipes into the ground. Place posts or supports behind each terminal leader. Use 10 feet length posts, allowing 2 feet to be driven into the ground. If cedar posts are used, sharpen the bottom end to a point for best results.

2. If planting consists of several trees, additional posts may be set at intervals.

3. String horizontally, three or four rows of wire from one post to the other. Place lower of first wire, 18 inches above the ground. Place second, third, etc., series of wires, 24 inches above each other.

4. Tie leaders to the wires by means of tarred twine or raffia.

One or More Horizontal Cordon Espaliers Planted Against a Wall or in the Open—

1. Set the posts 20 feet apart from each other and drive posts 2 feet deep. If cedar posts are used, sharpen bottom end to facilitate planting. For Single Horizontal Cordons, use 3 ft. length posts; for Double Horizontal Cordons, use 4 ft. lengths; and for Three Tiered Cordons, use 6 ft. lengths.

2. Wire or wires (depending upon the number of horizontal leaders) should be placed behind each horizontal leader.

3. Run wire horizontally and attach to posts by means of hook nails.

4. Tie leaders to wire with raffia or tarred twine.

5. Horizontal Cordons should be planted at a distance of 15 feet apart from each other to obtain best results.

Suggestions:

To Support a Single Tree Against a Wall or in the Open

Other than wire supports, a trellis of wooden laths can also be used for support. The trellis made with 2-inch laths nailed together in the form of squares somewhat like a checker board, and painted green or white will make a very attractive background. The leaders are fastened to the trellis with raffia, willow or tarred twine.

Fastening—Fan-Shaped Espaliers

1. From the center or trunk of the tree, mark off 8 feet on either side. Then drive spikes into the wall. Place spikes at a distance of 18 inches apart. Wire should be stretched lengthwise, passing in front of the tree branches and attached to the spikes.

Care of Espalier Dwarf Trained Fruit Trees

PRUNING: Vertical Branched Espaliers—Apple, Pear, Plum, Cherry. All side shoots longer than 4 inches should be cut back during the summer to 4 inches. But, should bearing spurs appear on a side shoot which is longer than 4 inches, don't prune that shoot, but allow it to bear the fruit first, for it takes 3 years for a tree to produce a single bearing spur. This pruning should be done about once a month during July, August and September.

Should the leaders become very compact with foliage thin the side shoots out, leaving spaces between bearing spurs 2 or 3 inches.

Prune the top of the main leaders in the early spring or winter when the tree is dormant. Cut previous year's top growth back to half its length with a sharp knife in a slanting position. The inner leaders should be kept about 6 inches shorter than the two end leaders. After the desired height has been attained, cut down to one eye each year; should they become too high, cut down below level of new growth, thus making space for future new growth. Espaliers can be allowed to grow almost any desired height, say from 5 to 12 feet. The pruning of the top leaders is very essential for it checks the future growth of the tree.

PRUNING HORIZONTAL BRANCHED ESPALIERS—Apple, Pear, Plum, Cherry. Cut back side shoots to 6 inches. As a general rule, the fruit of a Horizontal Cordon is borne on the shoots that develop along the outer sides of the leader. Therefore, if thinning out is necessary, do so on the shoots which grow on the top side of the leader. Never prune the ends of the Cordon, unless the tree has reached its desired length.

I M P O R T A N T

Pruning Espalier Trees every year is essentially important and it is the main key in obtaining successful results. Pruning avoids excess wood, helps one to enjoy picking a larger and far superior crop of fruit every year and brings out the symmetrical pattern of the Espalier Tree. When an Espalier Tree makes too much wood, not only is the beauty and effectiveness of the Espalier lost, but the fruit crop will result in a scanty yield, if any at all.

Leaders or Arms are the main branches or skeleton of the Espalier Tree which gives the tree its symmetrical pattern.

Side shoots are the twigs which develop along the main leaders or arms.

The Elbow is that part of the leader or arm which forms the curve.

A Bearing Spur is a small round swollen-like bud usually surrounded by a cluster of leaves, which eventually forms the fruit.

1. Use 8-inch galvanized spikes for stone, brick, or cement walls, allowing 6 inches to protrude from the wall. Use a star drill to avoid wall damage.

2. Use flanges for wooden or clapboard walls to prevent splitting. Flanges are 6-inch long pipes, 1-inch in diameter, fastened to the wall by means of screws. These may be painted to match the wall.

3. Use galvanized number 10 wire for best results.

4. Turnbuckles are used when the wire is loose and needs to be tightened for firm plantings.

5. Hook nails are used to fasten wire to any kind of wooden posts for neatest effect. Use 3-inch cedar posts of whatever lengths necessary.

6. For longer last, all posts inserted in the ground should be painted with creosote.

7. The wire, spikes, turnbuckles, hook nails, etc., can be purchased at any hardware store. Flanges can be obtained at any plumbing supply company. Cedar posts may be obtained at a lumber mill.

Type of Espalier	Number of spikes or flanges required
Single U Form	4
Four Armed	6
Six Armed	8
Eight Armed	10

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